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RECORDS OF MEETINGS.

One thousand and fiftieth Meeting.

OCTOBER 13, 1915.—STATED MEETING.

The Academy met at its House.

PRESIDENT WALCOTT in the Chair.

There were sixty-two Fellows present.

The following letters were presented by the Corresponding Secretary: from G. M. Allen, W. W. Atwood, Joseph Barrell, C. T. Brues, H. C. Bumpus, J. J. Carty, J. M. Clarke, W. D. Coolidge, R. H. Dana, L. E. Dickson, E. B. Drew, E. S. Drown, Alexander Forbes, G. S. Forbes, Philip Fox, F. L. Hitchcock, E. W. Hopkins, J. K. Hosmer, Aleš Hrdlička, Reid Hunt, Wm. DeW. Hyde, C. N. Jackson, Dunham Jackson, C. A. Kraus, Kirsopp Lake, H. R. Lang, W. K. Lewis, W. C. Loring, E. G. Martin, S. E. Morison, Bernadotte Perrin, J. C. Phillips, J. W. Platner, L. W. Riddle, R. W. Sayles, Charles Schuchert, M. S. Sherrill, W. R. Thayer, A. W. Weysse, Bailey Willis, S. W. Williston, F. A. Woods, F. E. Wright, R. M. Yerkes, accepting Fellowship; from H. L. Clark, declining Fellowship; from C. J. de la Vallee Poussin, Norman Lockyer, Ernest Rutherford, Johan H. L. Vogt, accepting Foreign Honorary Membership; from James F. Norris, of Nashville, Tennessee, resigning from the Council.

The following deaths were announced by the Chair: William Robert Ware, Class III., Section 4; Andrew Howland Russell, Class I., Section 4; John Ulric Nef, Class I., Section 3; Ezra Ripley Thayer, Class III., Section I; Charles Hallet Wing, Class I., Section 3; Frederic Ward Putnam, Class III., Section 2 (elected Jan. 25, 1865) William Watson, Class I., Section 4 (elected Feb. 9,

1864, Recording Secretary since May 27, 1884); Ingram Bywater, Foreign Honorary Member in Class III., Section 2.

On motion of Professor Webster, a rising tribute was given in honor of Professor Watson's long and devoted service to the Academy.

The Corresponding Secretary announced the election by the Council of Dr. William Sturgis Bigelow as Recording Secretary for the unexpired term of the late Professor Watson, and of Mr. Arthur D. Little as a member of the Council for the unexpired term of Professor James F. Norris.

The President announced that Professor Trowbridge was appointed to represent the Academy at the inauguration of the President of the Johns Hopkins University, May 21, 1915.

On recommendation of the Council, it was

Voted, To appropriate the sum of two hundred fifty ($250) dollars from the income of the General Fund, for use of the Treasurer.

Announcement was made that the proposed amendments to the Statutes were referred to a committee, consisting of Elihu Thomson, Henry Lefavour and H. H. Edes.

The following paper was presented by title: "On the Structure of Finite Continuous Groups." By Dr. A. J. Bullard. Presented by Henry Taber.

Mr. John J. Carty, chief engineer, American Telephone and Telegraph Co., a newly elected Fellow, addressed the Academy informally on the recent remarkable progress in wireless telephony.

The meeting then adjourned.

One thousand and fifty-first Meeting.

NOVEMBER 10, 1915.— STATED MEETING.

The Academy met at its House.

The PRESIDENT in the Chair.

There were forty-six Fellows and six guests present.

The following letters were presented by the Corresponding Secretary: — from J. P. Baxter, T. J. Burrill, A. C. Lawson, S. W.

McCall, accepting Fellowship; from Alfred Craven, declining Fellowship.

The President announced the gift by Dr. Malcolm Storer, of six portraits of scientific men, P. C. Asbjornsen, R. W. Bunsen, Leopold Gmelin, Julius Adolph Stockhardt, Jeffries Wyman, and a group of members of the Math.-nat. Classe of the Kais. Akad. der Wissenschaften, Wien, the property of the late Dr. Francis H. Storer.

The following communication was given: Ideational Behavior of Monkeys and Apes. By Professor R. M. Yerkes.

Professor W. M. Davis showed three portraits of Darwin, in youth, in middle age and in old age, and three portraits of Dana, at the same periods of life.

Professor E. S. Morse also exhibited a portrait of Darwin as an old man, considered by his family as the best in existence, also an interesting portrait of Darwin's mother.

The meeting then adjourned.

One thousand and fifty-second Meeting.

DECEMBER 8, 1915.— STATED MEETING.

The Academy met at its House.

The PRESIDENT in the Chair.

There were twenty-six Fellows and two guests present.

The Librarian announced the acquisition of the late Professor Watson's scientific books, drawings and models and stated the conditions of the bequest, referring to its exceptional character and value.

The Corresponding Secretary announced the lapse of Fellowship of Mordecai Thomas Endicott and the transference of Samuel Eliot Morison from Class III., Section 4 to Class III., Section 3.

The following communication was presented.

"On the Microscopic Structure of Vegetable Organisms found in Coal," by Professor E. C. Jeffrey. A general discussion followed.

The meeting then adjourned.

One thousand and fifty-third Meeting.

JANUARY 12, 1916.— STATED MEETING.

The Academy met at its House.

The PRESIDENT in the Chair.

There were forty Fellows and two guests present.

A letter from Hugo Münsterberg, resigning Fellowship was presented by the Corresponding Secretary.

The Chair announced the following deaths: James Clark White, Fellow in Class II., Section 3; Sir Henry Enfield Roscoe, Foreign Honorary Member in Class I., Section 3.

The Corresponding Secretary announced the receipt of biographical memoirs of deceased Fellows, as follows: in Class I., Thomas Messinger Drown, John Morse Ordway; Charles Hallet Wing, by H. P. Talbot; Edward Stickney Wood, by J. C. Warren; in Class II., George Jarvis Brush, by C. H. Warren; Sir John Murray, by George Agassiz; Eduard Strasburger, by W. J. V. Osterhout; in Class III., James Barr Ames, by Samuel Williston; John Chipman Gray, by J. H. Beale; Daniel Coit Gilman, by C. R. Lanman; Bennett Hubbard Nash, by E. S. Sheldon; George Park Fisher, by J. H. Ropes; Henry Leland Chapman, by W. deW. Hyde; Horace Howard Furness, by W. A. Neilson; Augustus St. Gaudens, by D. C. French.

The following gentlemen were elected Fellows of the Academy:—

Class I., Section 2 (Physics): —

Emory Leon Chaffee, of Cambridge; Frederick Albert Saunders, of Poughkeepsie, N. Y.

Class II., Section 1 (Geology, Mineralogy and Physics of the Globe): —

George Hunt Barton, of Cambridge.

Class II., Section 2 (Botany): —

Bradley Moore Davis, of Philadelphia, Pa.

Class II., Section 3 (Zoölogy and Physiology): —

Thomas Barbour, of Boston.

Class III., Section 3 (Political Economy and History): —

John Bates Clark, of New York, N. Y.; Frank Johnson Goodnow, of Baltimore, Md.; John Osborne Sumner, of Boston.

The following gentleman was elected a Foreign Honorary Member: —

Class III., Section 3 (Political Economy and History): —

Alfred Marshall, of Cambridge, England.

The following communications were presented: —

Dr. Kirsopp Lake, "The Monks of Mt. Athos." Illustrated with lantern slides. Professor George F. Moore, "Mohammedan Law."

The following paper was presented by title: —

"On Cyclical Variations in Eruption at Kilauea." By Harry O. Wood, presented by T. A. Jaggar.

The meeting then adjourned.

One thousand and fifty-fourth Meeting.

FEBRUARY 9, 1916.— STATED MEETING.

The Academy met at its House.

The PRESIDENT in the Chair.

There were fifty-one Fellows and ten guests present.

Letters were presented: from E. L. Chaffee, F. A. Saunders, G. H. Barton, B. M. Davis, Thomas Barbour, J. B. Clark, F. J. Goodnow, and J. O. Sumner, accepting Fellowship.

The Corresponding Secretary announced the receipt of memoirs of deceased Fellows, as follows: in Class I.; Alfred Noble, by Desmond FitzGerald; Wolcott Gibbs, by T. W. Richards; Samuel William Johnson, by R. H. Chittenden; Sir George Howard Darwin and George William Hill by E. W. Brown; in Class II., Reginald Heber Fitz, by J. C. Warren; Cyrus Gurnsey Pringle, by B. L. Robinson; John Shaw Billings, by H. P. Walcott; Friedrich Daniel von Recklinghausen, by W. T. Councilman; in Class III., William Watson Goodwin and Samuel Henry Butcher, by H. W. Smyth; Abner Cheney Goodell, by A. McF. Davis; Frederic William Maitland and Henry Charles Lea, by C. H. Haskins; Ingram Bywater, by C. H. Moore; Francis Cabot Lowell, by A. L. Lowell; Thomas Day Seymour, by J. W. White.

The following death was announced by the Chair: Dr. Ludimar Hermann, Foreign Honorary Member in Class II., Section 3.

Communications were presented by Professor E. B. Wilson on "The Mechanics of the Motion of Aeroplanes"; by Professor A. G. Webster on "The Elementary Principles of Flight"; by Lieutenant J. C. Hunsaker on "The Experimental Determination of the Dynamical Properties of Aeroplanes"; by Mr. G. C. Loening on "The Construction of Aeroplanes"; by Lieutenant B. Q. Jones on "The Manoeuvring of Aeroplanes."

The meeting then adjourned.

One thousand and fifty-fifth Meeting.

MARCH 8, 1916.— STATED MEETING.

The Academy met at its House.

The PRESIDENT in the Chair.

There were twenty Fellows and four guests present.

A letter was presented from Mr. Alfred Marshall, accepting Foreign Honorary Membership.

The Corresponding Secretary announced the receipt of memoirs of deceased Fellows as follows: in Class I., Sir David Gill, Edward S. Holden, and George Davidson, by W. W. Campbell; John Ulric Nef, by J. O. Stieglitz; in Class II., Charles Sedgwick Minot, by W. T. Councilman; Ferdinand Freiherr von Richthofen, by R. A. Daly; Frederic Ward Putnam, by R. B. Dixon; John Henry Wright, by C. B. Gulick; Gaston Boissier, by E. K. Rand.

The Chair appointed the following Councillors to act as Nominating Committee: —

ARTHUR D. LITTLE, of Class I.,
GEORGE H. PARKER, of Class II.,
FRANK W. TAUSSIG, of Class III.

On recommendation of the Council, the following appropriations were made for the ensuing year: —

From the income of the General Fund, $5550, to be used as follows: —

for House expenses	$1600.
for Library expenses	1500.
for Books, periodicals and binding	1000.
for Meeting expenses	250.
for Treasurer's office	800.
for General expenses	400.

From the income of the Publication Fund, $3000. to be used for publication.

From the income of the Rumford Fund $2926.60 to be used as follows:

for Research	$1000.
for Books, periodicals and binding	200.
for Publication	600.
to be used at the discretion of the Committee	1126.60

From the Warren Fund $550. to be used at the discretion of the Committee.

An appropriation of $150. was made from the income of the General Fund for use of the Treasurer's office during the present year.

The following communication was given: "The Inheritance of Size in Guinea Pig Crosses," by Dr. William E. Castle. This was followed by a brief discussion.

The meeting then adjourned.

One thousand and fifty-sixth Meeting.

APRIL 12, 1916.— STATED MEETING.

The Academy met at its House.

The PRESIDENT in the Chair.

There were twenty-seven Fellows and one guest present.

A letter from Mr. Joseph Young Bergen, resigning Fellowship, was presented.

The Corresponding Secretary announced the receipt of two memoirs of deceased Fellows: Jean Baptiste Edouard Bornet, by W. G. Farlow; Charles Pickering Putnam, by J. J. Putnam.

The following deaths were announced by the Chair: Erasmus Darwin Leavitt, Class I., Section 4; James Burrill Angell, Class III., Section 4.

The following report of the Committee on the Amendments to the Statutes was presented: —

The Committee to which the several proposed Amendments to the Statutes were referred begs leave to report: —

Articles 2 and 3 of Chapter III, concerning Elections, are herewith submitted in a new draft, which substitutes the word "nominations" for "candidates"; provides that nominations shall be accompanied by statements of the qualifications of nominees and brief biographical data; that nomination papers shall be retained by the Corresponding Secretary until the first instead of the fifteenth of October or February; that the Fellows shall be notified not later than the fifteenth instead of the thirtieth of September and January that the time limit for making nominations will expire on the first instead of the fifteenth of the following month; and strikes out the provisions for reading nominations at the December and April meetings and posting them in the Hall. There are also a few, slight, verbal changes in no way affecting the provisions of the Chapter as they now stand.

Articles 3 and 4 of Chapter IV should be amended by striking out the requirement that the Recording Secretary shall send to the Fellows with any Independent Nominations for office which may be made, a list of the Regular Nominations, which have been previously mailed to them. There are also two slight verbal changes.

Article 2 of Chapter VI should be amended by striking out the requirement to post in the Hall a list of nominations to Fellowship; and specifically providing that the Report of the Nominating Committee shall be sent by the Recording Secretary to the Fellows at least three weeks before the Annual Meeting.

Article 5 of Chapter XI should be amended by striking out the reference to the present requirement that nominations to Fellowship shall be read to the Academy.

A draft of these six Articles as they will read if the recommendations of this Report are adopted is hereto annexed.

The Committee is unanimously of opinion that the proposed amendment to Article 1 of Chapter IV, providing that the President and Vice-Presidents shall not be elected for more than three years in succession, is inexpedient and should not be adopted.

Respectfully submitted,

ELIHU THOMSON.
HENRY LEFAVOUR.
HENRY H. EDES.

Boston, 12 April, 1916.

CHAPTER III.

ARTICLE 2. Nominations to Fellowship or Foreign Honorary Membership in any Section must be signed by two Fellows in that Section. These nominations shall be sent to the Corresponding Secretary, accompanied by statements of qualifications and brief biographical data, and shall be retained by him until the first of the following October or February, as the case may be. All nominations then in his hands shall be sent in printed form to every Fellow having the right to vote, with the names of the proposers in each case, and with a request to send to the Corresponding Secretary written comments on these names not later than the fifth of November or the fifth of March respectively.

All the nominations, with the comments thereon received up to the fifth of November or the fifth of March, shall be referred at once to the appropriate Class Committees, which shall report their decisions to the Council at a special meeting to be called to consider nominations not later than two days before the meeting of the Academy in December or April respectively.

Notice shall be sent to every Fellow having the right to vote, not later than the fifteenth of September or January of each year, calling attention to the fact that the limit of time for sending nominations to the Corresponding Secretary will expire on the first of the following month.

ARTICLE 3. Not later than the fourth Wednesday of December and April the Corresponding Secretary shall send in print to every Fellow having the right to vote all nominations that have been approved by the Council, with a brief account of each nominee.

See Chap. ii; chap. vi. art. 1; chap. ix. art. 1.

CHAPTER IV.

ARTICLE 3. At the Stated Meeting in March, the President shall appoint a Nominating Committee of three Fellows having the right to vote, one from each Class. This Committee shall prepare a list of nominees for the several offices to be filled, and for the Standing Committees, and file it with the Recording Secretary not later than four weeks before the Annual Meeting.

See Chap. vi. art. 2.

ARTICLE 4. Independent nominations for any office, if signed by at least twenty Fellows having the right to vote, and received by the Recording Secretary not less than ten days before the Annual Meeting, shall be inserted in the call therefor, and shall be mailed to all the Fellows having the right to vote.

See Chap. vi. art. 2.

CHAPTER VI.

ARTICLE 2 (Fifth Paragraph). After all elections, he shall insert in the Records the names of the Fellows by whom the successful nominees were proposed.

He shall send the Report of the Nominating Committee in print to every Fellow having the right to vote at least three weeks before the Annual Meeting.

See Chap. iv. art. 3.

CHAPTER XI.

ARTICLE 5. No Fellow shall introduce a guest at any meeting of the Academy until after the business has been transacted, and especially until after the result of the balloting upon nominations has been declared.

On motion of Mr. Leverett, it was

Voted, That the report of the Committee be accepted and the Amendments to the Statutes therein proposed be adopted.

The following communication was presented: "Bergson's Philosophy of Instinct as Viewed by an Entomologist." By Professor W. M. Wheeler. A general discussion followed.

The meeting then adjourned.

One thousand and fifty-seventh Meeting.

MAY 10, 1916.— ANNUAL MEETING.

The Academy met at its House.

The PRESIDENT in the Chair.

There were sixty-two Fellows and five guests present:

The Corresponding Secretary presented a letter from George Whitefield Chadwick, resigning Fellowship. The following bio-

graphical memoirs were also presented: Henry Williamson Haynes, by G. H. Chase; Henry Clifton Sorby, by J. E. Wolff; Israel Cook Russell, by A. C. Lane.

The death of Thomas Jonathan Burrill, Fellow in Class II., Section 2, was announced by the Chair.

The following report of the Council was presented: —

Since the last report of the Council there have been reported the deaths of eleven Fellows: — William Robert Ware, Andrew Howland Russell, John Ulric Nef, Ezra Ripley Thayer, Charles Hallett Wing, Frederic Ward Putnam, William Watson, James Clark White, Erasmus Darwin Leavitt, James Burrill Angell, Thomas Jonathan Burrill; and of three Foreign Honorary Members: — Ingram Bywater, Henry Enfield Roscoe, Ludimar Hermann.

Fifty-eight Fellows have been elected, of which number, two have declined Fellowship. One Fellow, elected in 1914, has not yet accepted. One Fellow, not accepting, has allowed his Fellowship to lapse.

Three Fellows: — Hugo Münsterberg, Joseph Young Bergen, George Whitefield Chadwick, have resigned Fellowship.

Seven Foreign Honorary Members have been elected, of which number, two have not yet accepted. Two previously elected, have not yet accepted.

The roll now includes 476 Fellows and 66 Foreign Honorary Members.

The annual report of the Treasurer was read, of which the following is an abstract: —

General Fund.

Receipts.

Balance, April 1, 1915	$1,001.19	
Investments	2,966.44	
Assessments	3,300.00	
Admissions	560.00	
Sundries	105.35	$7,932.98

Expenditures.

Expense of Library	$2,442.57	
Expense of House	1,575.79	
Expense of Meetings	260.98	
Treasurer	432.73	
Insurance	393.49	
General Expense of Society	251.58	
Interest on Bonds, bought	53.61	
Income transferred to principal	262.63	$5,673.38
Balance, April 1, 1916		2,259.60
		$7,932.98

RUMFORD FUND.

Receipts.

Balance, April 1, 1915	$3,334.48	
Investments	3,153.38	
Sale of Publications	3.75	
Interest on grant returned, 1915	81.25	$6,572.86

Expenditures.

Research	$2,370.00	
Books, periodicals and binding	135.89	
Publication	300.00	
Medals	454.00	
Sundries	13.25	
Income transferred to principal	153.16	$3,426.30
Balance, April 1, 1916		3,146.56
		$6,572.86

C. M. WARREN FUND.

Receipts.

Balance, April 1, 1915	$2,189.64	
Investments	1,138.44	$3,328.08

Expenditures.

Research	$383.50	
Vault rent, part	1.06	
Interest on Bonds, bought	11.38	
Income transferred to principal	1,029.91	$1,425.85
Balance, April 1, 1916		1,902.23
		$3,328.08

PUBLICATION FUND.

Receipts.

Balance, April 1, 1915	$1,670.04	
Appleton Fund investments	841.46	
Centennial Fund investments	2,369.26	
Author's Reprints	458.00	
Sale of Publications	163.40	$5,502.16

Expenditures.

Publications	$3,882.89	
Vault rent, part	4.17	
Income transferred to principal	158.15	$4,045.21
Balance, April 1, 1916		1,456.95
		$5,502.16

FRANCIS AMORY FUND.

Receipts.

Investments	$1,085.00	$1,085.00

Expenditures.

Interest on Bonds and Mortgage, bought	$243.80	
Sundries	6.25	
Income transferred to principal	834.95	$1,085.00

The following reports were also presented: —

Report of the Library Committee.

The Librarian begs to submit the following report: —

During the year, 65 books have been borrowed from the Library by 21 persons, including 14 Fellows and 1 library. All books taken out have been satisfactorily accounted for, except one taken out in April, 1914.

The number of bound volumes on the shelves at the time of the last report was 34,287. 394 volumes have been added during the past year, making the number now on the shelves, 34,681. This includes 49 purchased from the income of the General Fund, 15 from that of the Rumford Fund, and 330 received by gift or exchange. The pamphlets added during the year number 140.

The expenses charged to the Library during the financial year are: —

Salaries	$1,809.87
Binding: —	
General Fund	379.05
Rumford Fund	40.85
Purchase of periodicals and books: —	
General Fund	226.59
Rumford Fund	95.04
Miscellaneous	27.06
Total	$2,578.46

The scientific books of the late Professor Watson, the first choice of which he bequeathed to the Academy, have been received and deposited on the fourth floor. The Assistant Librarian intends to arrange and list them during the summer.

A. G. Webster, *Librarian.*

May 10, 1916.

Report of the Rumford Committee.

During the present year appropriations have been made in aid of research as follows:

Nov. 10, 1915. For the purchase of a calorimeter bridge of high precision, a galvanometer of high sensibility, and a calorimeter thermometer, to be loaned to Professor Farrington Daniels in aid of his researches on specific heats $330

For the purchase of a comparator to be loaned to Mr. Raymond T. Birge for his researches in spectroscopy 200

To Professor P. W. Bridgman in aid of his researches on thermal phenomena under high pressures (additional) . . . 400

To Professor A. L. Clark in aid of his researches on the physical properties of vapors in the neighborhood of the critical point. (Additional) 300

To Professor Gilbert N. Lewis in aid of his researches on free energy. (Additional) 300

January 12, 1916. To Professor H. M. Randall in aid of his researches on the infra-red spectrum, to defray the salary of an assistant 200

March 8, 1916. For the purchase of the comparator to be loaned to Mr. Birge. (Additional) 175

To Professor Louis V. King in aid of his research on the determination of the molecular constants of gases over the range of temperatures from 25° K to 1273° K 250

April 12, 1916. To Professor Frederick Palmer, Jr., in aid of his research on the properties of light of extremely short wave lengths 100

May 10, 1916. To Professor R. A. Millakan in aid of his researches on the photoelectric properties of metals in extreme vacua 500

On January 12, 1916, the Committee voted to appropriate from the Publication Fund the sum of $600 for the publication of two papers by Professor Bridgman on the thermal properties of substances under high pressures and $300 for the publication of a paper by Dr. Bell and Dr. Verhoeff on the effect of radiant energy upon the eye.

The Chairman having announced to the Committee that the set of replicas of the Rumford Medals from the beginning was now complete, it was voted to authorize him to make provisions for the display at the home of the Academy of these and such future replicas as shall be made.

It was also voted by the Committee in sequence to an earlier action upon the same matter to present to the Rumford Historical Society of Woburn a replica in bronze of the first medal awarded by the Academy to Dr. Robert Hare in 1839.

Reports of progress in their several researches have been received from the following persons: Messrs. C. G. Abbot, R. T. Birge, P. W. Bridgman, W. W. Campbell, A. L. Clark, D. F. Comstock, H. Crew, F. Daniels, E. B. Frost, H. C. Hayes, L. J. Henderson, (research finished), H. P. Hollnagel, N. A. Kent, F. G. Keyes (research finished), L. V. King, C. A. Kraus, A. B. Lamb, G. N. Lewis, R. S. Minor, E. L. Nichols, C. L. Norton, F. Palmer, Jr., J. A. Parkhurst, T. W. Richards, G. W. Ritchey, F. A. Saunders, W. O. Sawtelle, A. W. Smith, J. Stebbins, F. W. Very.

The following papers have been published in Volume 51 of the Proceedings of the Academy since the last annual meeting with aid from the Rumford Fund:

No. 2. "Polymorphic Transformations of Solids under Pressure," by P. W. Bridgman.

No. 12. "Polymorphic Changes under Pressure of the Univalent Nitrates," by P. W. Bridgman.

No. 13. "The Pathological Effects of Radiant Energy on the Eye" by F. H. Verhoeff, and L. Bell, with a systematic Review of the Literature by C. B. Walker.

CHARLES R. CROSS, *Chairman.*

May 10, 1916.

REPORT OF THE C. M. WARREN COMMITTEE.

The C. M. Warren Committee begs to submit the following report: The balance in the hands of the Committee at the time of its last report was $651.50. An additional appropriation of $800 was made at the meeting of May 12, 1915, and a further appropriation of $550 at the meeting in March, 1916. During the year a grant of $500 has been made to Professor James P. Norris for the study of factors which influence the valency of carbon, with the understanding that this sum may be used for the employment of a research assistant, who shall devote substantially all of his time to the research during the period for which payments are made from this grant. A grant of $300 has been made to Dr. Grinnell Jones for his work on the free energy of chemical reactions, with the understanding that a portion of it will be used for necessary apparatus and supplies, and a portion

for the payment of an assistant. The Committee also voted to appropriate sufficient money from the funds at its disposal to provide for the reprinting of two papers describing work done by Professor Mabery under grants from the Fund, namely Vol. 30, no. 1, and Vol. 31, no. 1. These are now out of print.

After deducting the amount of the appropriations to Professors Norris and Jones the Committee has at its disposal at the present time $1,201.50, from which must be further deducted the amount necessary to pay for the printing, probably in the vicinity of $30.

The question of the practicability of publishing a list of the current publications of the Academy in connection with the notices of meetings was raised with the Recording Secretary, and the suggestion has since been put into effect.

The work of Professor Harkins on the surface tension at the interface between two liquids has been completed, and the results are being published in the Journal of the American Chemical Society.

There is evidence that satisfactory progress is being made in other researches, and that other work will be published during the coming year.

Respectfully submitted,

H. P. TALBOT, *Chairman.*

May 10, 1916.

REPORT OF THE PUBLICATION COMMITTEE.

The Committee of Publication submits the following report for the period from April 1, 1915 to April 1, 1916.

During this period, 778 pages of the Proceedings have been issued, namely, Nos. 9–13 of Vol. 50 and Nos. 1–10 of Vol. 51.

One of these numbers (No. 2 of Vol. 51), costing $300 was paid for out of the funds of the Rumford Committee.

The accounts of the Committee of Publication up to April 1, 1916, stand as follows:

Balance on hand April 1, 1915	$1,670.04
Appropriation for 1915–1916	3,000.00
Proceeds from the sale of publications	163.40
Total available funds	4,833.44
Expenses (including an item of $32.52 for a running advertisement in "Science")	3,424.89
Balance on hand April 1, 1916	$1,408.55

It may be of interest to note that the size of the regular edition of the Proceedings is 1000 copies, including the 200 copies which are supplied to the author free of charge. For the convenience of authors, all orders for "extra" reprints (that is, reprints in excess of 200, chargeable to the author at cost) are now transmitted through the Committee. During the present year, authors have ordered such extra reprints to the amount of $458.00.

Respectfully submitted,

EDWARD V. HUNTINGTON, *Chairman.*

May 10, 1916.

REPORT OF THE HOUSE COMMITTEE.

The House Committee submits the following report for the year 1915–1916.

The Committee had at its disposal at the beginning of the year a balance of $306.12. The appropriation by the Academy for the year was $1600, and there has been received for the use of the rooms, from the Harvard Technology Chemical Club, $15, from the Colonial Society $15, making the total amount at the disposal of the Committee $1936.12.

The total expenditure for the year was $1,575.79, leaving at the close of the fiscal year an unexpended balance of $360.33. The expenditures may be summarized as follows: —

Janitor		$750.00
Electricity	A. Light	83.60
	B. Power	47.60
Gas		11.44
Water		8.00
Telephone		50.73
Coal	Furnace	343.00
	Water Heater	45.00
Wood		5.00
Ash tickets		14.00
Care of Elevator		30.80
Ice		14.40
Janitor's materials		14.06
Furnishings		55.66
Up-keep		100.50
Sundries		2.00
Total expenditure		$1,575.79

During the year the Academy has held eight meetings in the building. Other meetings have been held as follows: — The Boston Society of the Archaeological Institute of America, one; Massachusetts Board of Health, four; Harvard-Technology Chemical Club, five; Harvard Biblical Club, six; Colonial Society, four. There has been the usual use of the small rooms by the Council and Committees.

During the year the House Committee has been able not only to maintain the physical condition of the property of the Academy but to make a few changes which, it is hoped, will result in the greater comfort of the Fellows. New and more comfortable chairs have been purchased for use not only in the meeting room but in the reception room. Changes have been made in the position of a portion of the ventilating apparatus for the purpose of eliminating noise which has been most annoying in the past. Changes have been made also in the arrangement of the intake of air for ventilating purposes, which it is hoped will result in some economy in fuel.

The House Committee hopes that during the coming year means may be found whereby two improvements coming within their supervision may be carried out; one an improvement in the windows of the stack whereby the cold air and dust which is now a serious menace to our library may be eliminated and, second, a new lantern for the meeting room.

Experiments have been carried out during the year by Dr. Bigelow to find the best way of keeping the stack clean and at a proper temperature. He has had one window arranged in a manner which, it is believed, will remedy the present difficulties if it can be applied to all of the windows in the stack. The need of a good lantern is evident.

The Committee wishes to express its obligation to Mrs. Holden, the assistant Librarian, for her co-operation and assistance.

Respectfully submitted,

HAMMOND V. HAYES, *Chairman.*

May 10, 1916.

On motion of the Treasurer, it was

Voted, That the Annual Assessment be ten ($10) dollars.

The annual election resulted in the choice of the following officers and committees: —

HENRY P. WALCOTT, *President.*
ELIHU THOMSON, *Vice-President for Class I.*
WILLIAM M. DAVIS, *Vice-President for Class II.*

GEORGE F. MOORE, *Vice-President for Class III.*
HARRY W. TYLER, *Corresponding Secretary.*
WM. STURGIS BIGELOW, *Recording Secretary.*
HENRY H. EDES, *Treasurer.*
ARTHUR G. WEBSTER, *Librarian.*

Councillors for Four Years.

GREGORY P. BAXTER, of Class I.
WILLIAM M. WHEELER, of Class II.
ARCHIBALD C. COOLIDGE, of Class III.
To fill the unexpired term of W. S. Bigelow as Councillor till 1917,
MARK A. DEW. HOWE.

Finance Committee.

HENRY P. WALCOTT, JOHN TROWBRIDGE,
GEORGE V. LEVERETT.

Rumford Committee.

CHARLES R. CROSS, ELIHU THOMSON,
EDWARD C. PICKERING, LOUIS BELL,
ARTHUR G. WEBSTER, ARTHUR A. NOYES,
THEODORE LYMAN.

C. M. Warren Committee.

HENRY P. TALBOT, GREGORY P. BAXTER,
WALTER L. JENNINGS, ARTHUR A. NOYES,
CHARLES L. JACKSON, ARTHUR D. LITTLE,
WILLIAM H. WALKER.

Publication Committee.

EDWARD V. HUNTINGTON, of Class I.
WALTER B. CANNON, of Class II.
ALBERT A. HOWARD, of Class III.

Library Committee.

ARTHUR G. WEBSTER,
HARRY M. GOODWIN, of Class I.
SAMUEL HENSHAW, of Class II.
WILLIAM C. LANE, of Class III.

House Committee.

HAMMOND V. HAYES, LOUIS DERR,
WM. STURGIS BIGELOW.

Committee on Meetings.

THE PRESIDENT, THE RECORDING SECRETARY,
WILLIAM M. DAVIS EDWIN B. WILSON,
GEORGE F. MOORE.

Auditing Committee.

GEORGE R. AGASSIZ, JOHN E. THAYER.

The following gentlemen were elected Fellows of the Academy:—

Class II., Section 1 (Mathematics and Astronomy): —

Isaiah Bowman, of New York, N. Y.; William Bullock Clark, of Baltimore, Md.; Ellsworth Huntington, of Milton; Charles Kenneth Leith, of Madison, Wis.

Class II., Section 2 (Physics): —

William Albert Setchell, of Berkeley, Cal.; William Codman Sturgis, of Boston.

Class II., Section 3 (Zoölogy and Physiology): —

John Wallace Baird, of Worcester; John Lewis Bremer, of Boston; Frederic Thomas Lewis, of Waban; Percy Goldthwait Stiles, of Newtonville.

Class III., Section 2 (Philology and Archaeology): —

Louis Herbert Gray, of Boston;

Class III., Section 3 (Political Economy and History): —

Albert Bushnell Hart, of Cambridge.

Class III., Section 4 (Literature and the Fine Arts): —

Arthur Sherburne Hardy, of Woodstock, Conn.

The following gentleman was elected Foreign Honorary Member: —

Class III., Section 4 (Literature and the Fine Arts): —

Thomas Hardy, of Dorchester, England.

The following communications were presented: —

Professor George E. Hale, "Researches on the Nature of Sun-Spots."

Professor Percival Lowell, "Application of Improved Methods to the Photography of the Martian Canals."

The following paper was presented by title:

"New or Critical Species of Chitonomyces and Rickia." By Roland Thaxter.

The meeting then adjourned.